

WHAT IS CLAIMED IS:

- 1     1.     A security method for use in a communication system,  
2     the security method comprising:  
3         receiving an IP packet including a source address and  
4     a destination address;  
5         obtaining physical location information indicating the  
6     location of a user device which is the source of said IP  
7     packet; and  
8         determining, as a function of the obtained physical  
9     location information, an action to be taken.
- 1     2.     The security method of claim 1, wherein determining an  
2     action to be taken includes:  
3         comparing the obtained physical location information  
4     to information listing physical locations authorized to  
5     obtain access to a service for which security is to be  
6     provided.
- 1     3.     The security method of claim 2, further comprising:  
2         dropping said packet when said comparing does not  
3     result in a match between the obtained physical location  
4     information and the information listing physical locations  
5     authorized to obtain access to the service.
- 1     4.     The security method of claim 2, wherein said service  
2     is one of a banking service, video on demand service and a  
3     music on demand service.
- 1     5.     The security method of claim 2, further comprising:

2 forwarding said packet to the destination address when  
3 said comparing results in a match between the obtained  
4 physical location information and the information listing  
5 physical locations authorized to obtain access to the  
6 service.

1 6. The security method of claim 1, wherein obtaining  
2 physical location information includes:

3 transmitting a location information request message  
4 including the source address of the received IP packet; and  
5 receiving in response to said transmitted location  
6 information request message, information corresponding to  
7 the location of the user device.

1 7. The security method of claim 6, further comprising:  
2 determining the location of the user device from edge  
3 router and port information obtained from an edge router.

1 8. The security method of claim 7, wherein determining  
2 the location of the user device further includes:  
3 performing a database lookup operation to retrieve a  
4 geographic location stored in association with said edge  
5 router and port information.

1 9. The security method of claim 8, further comprising:  
2 further receiving, in response to said transmitted  
3 location information request message, a device identifier  
4 associated with the source address of said IP packet; and  
5 comparing the received device identifier to a list  
6 device identifiers corresponding to stolen devices.

1     10. The security method of claim 9, wherein said device  
2     identifier is a MAC address.

1     11. The method of claim 9, further comprising:  
2         generating a message indicating the detection of a  
3     stolen device when said comparing step detects a match  
4     between the received device identifier and an device  
5     identifier in said list of device identifiers corresponding  
6     to stolen devices.

1     12. The method of claim 11, wherein said generated message  
2     includes information indicating the a geographic location  
3     where the identified stolen device is being used.

1     13. The method of claim 12, wherein said geographic  
2     location is a post office address.

1     14    The method of claim 1, further comprising:  
2         determining if the destination address corresponds to  
3     a service for which security is to be provided; and  
4         wherein said steps of obtaining physical location  
5     information and determining an action to be taken are  
6     performed when it is determined that said destination  
7     address corresponds to a service for which security is to  
8     be provided.

1     15. A security device for use in a communication system in  
2     which IP packets are transmitted, the device comprising:  
3         means for receiving an IP packet including a source  
4     address and a destination address;

5 means for obtaining physical location information  
6 indicating the location of a user device which is the  
7 source of said IP packet; and

8 means for determining, as a function of the obtained  
9 physical location information, an action to be taken.

1 16. The security device of claim 15, further comprising:

2 a database of physical location information listing  
3 physical locations authorized to obtain access to said  
4 service; and

5 wherein said means for determining an action to be  
6 taken includes a comparator for comparing the obtained  
7 physical location information to information listing  
8 physical locations authorized to obtain access to a service  
9 for which security is to be provided.

1 17. The security device of claim 16, further comprising:

2 means for dropping said packet when said comparing  
3 does not result in a match between the obtained physical  
4 location information and the information listing physical  
5 locations authorized to obtain access to the service.

1 18. The security device of claim 2, wherein said service  
2 is one of a banking service, video on demand service and a  
3 music on demand service.

1 19. A stolen device detection method, the method  
2 comprising the steps of:

3 storing a list of device identifiers corresponding to  
4 stolen devices;

5           receiving an IP packet from a device including an IP  
6           address associated with said device;

7           using said IP address associated with said device to  
8           determine a device identifier also associated with said  
9           device;

10          comparing the determined device identifier to said  
11          stored list of device identifiers corresponding to stolen  
12          devices; and

13          determining that said IP address corresponds to a  
14          stolen device when said determined device identifier  
15          matches a device identifier in said stored list.

1       20. The stolen device detection method of claim 19,  
2       wherein said determined device identifier is a MAC address  
3       and wherein said stored list of device identifiers is a  
4       list of MAC addresses.

1       21. The stolen device detection method of claim 19,  
2       further comprising:

3           determining the location from which said device is  
4           used from said IP address and from information determined  
5           from a MAC address corresponding to said device.

1       22. The stolen device detection method of claim 21,  
2       further comprising:

3           generating a message indicating the location of device  
4           determined to be a stolen device, said message including  
5           the determined location from which said device is being  
6           used.

1     23. The stolen device detection method of claim 21,  
2     wherein said step of determining the location from which  
3     said device is used includes:

4         determining a router and port through which said  
5     device transmitted said IP packet; and

6         obtaining location information from a database  
7     associating router and port numbers with physical locations  
8     corresponding to subscriber premises.

1     24. The stolen device detection method of claim 23,  
2     further comprising:

3         storing owner contact information with said list of  
4     stolen device identifiers.

1     25. The stolen device detection method of claim 24,  
2     wherein said owner contact information includes an E-mail  
3     address corresponding to an owner of a stolen device.

1     26. The stolen device detection method of claim 23,  
2     further comprising:

3         storing law enforcement contact information with said  
4     list of stolen device identifiers.

1     27. The stolen device detection method of claim 24,  
2     wherein said law enforcement contact information includes  
3     an E-mail address corresponding to an owner of a stolen  
4     device.

1     28. A system for detecting stolen devices using IP  
2     addresses, the system comprising:

3           a stored list of device identifiers corresponding to  
4 stolen devices;

5           means for receiving an IP packet from a device  
6 including an IP address associated with said device;

7           means for determining a device identifier associated  
8 with said device from said IP address associated with said  
9 device;

10          means for comparing the determined device identifier  
11 to said stored list of device identifiers corresponding to  
12 stolen devices; and

13          means for determining that said IP address corresponds  
14 to a stolen device when said determined device identifier  
15 matches a device identifier in said stored list.

1    29. The system of claim 28, wherein said determined device  
2 identifier is a MAC address and wherein said stored list of  
3 device identifiers is a list of MAC addresses.

1    30. The system of claim 29, further comprising:

2           means for determining the location from which said  
3 device is used from said IP address and from information  
4 determined from a MAC address corresponding to said device.

1    31. The system of claim 30, further comprising:

2           means for generating a message indicating the location  
3 of device determined to be a stolen device, said message  
4 including the determined location from which said device is  
5 being used.

1    32. A location verification method, the method comprising;

2           receiving an IP packet including a source address;

3           determining from said source address the geographic  
4           location from which said IP packet was sent;

5           comparing the determined geographic location  
6           information to expected information indicating the expected  
7           source of an IP packet; and

8           determining a reporting error when said determined  
9           geographic location information does not match the expected  
10          geographic location information.

1        33. The location verification method of claim 32, further  
2        comprising:

3           transmitting a message including information on the  
4           determined reporting error to a law enforcement authority.

1        34. The location verification method of claim 33, further  
2        comprising:

3           including the determined geographic location  
4           information in said message.

1        35. The location verification method of claim 34, further  
2        comprising:

3           identifying the device transmitting said IP packet  
4           from a MAC address determined from a database associating  
5           said MAC address with said source address.

1        36. The location verification method of claim 35, wherein  
2        said IP packet is transmitted from a bracelet worn by a  
3        parolee and wherein said IP packet includes parolee  
4        identification information, the method further comprising:

5           including in said message information obtained from  
6           said IP packet identifying the parolee.

1        37. The location verification method of claim 33, further  
2        comprising:

3                determining if said IP packet was sent at a  
4        predetermined time during which a location reporting  
5        message was scheduled to be transmitted.